

**Evaluation Plan
Status Report-SAME-TEC
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Goal 1: Revise curriculum and courses, creating new materials for instructors, new materials for student learning and enrichment and faculty guidance to reflect the contemporary and emerging systems view of electronics.

Evaluation Questions:

- Does the curricula and program design for the six core electronics courses meet the requirements identified by the electronics industry professional societies and education groups?

There is a strong emphasis on identifying core competencies at this stage of curricula development. Industry advisory board review of program and curricula materials as well as pilot college feedback will be used in future to gauge this question.

- Is a process in place for: i) identifying current state of the curriculum and programs? ii) guiding the development of the programs and courses to be revised? iii) keeping the curriculum current as technology changes?

Collaborative process by electronics faculty curriculum developers reviewed existing textbooks, created a framework of current topics covered and reached consensus on topics to add and remove or decrease emphasis as well as the level of understanding a student should demonstrate for each topic.

Goal 1: Continued

- Is there a validated design for the curriculum and materials component of the program? How often and with what students are the resources used in the faculty's classroom?

Since each college will adapt and utilize different modules and lab experiments depending on program focus and local industry needs individual college faculty and student feedback are essential. Assessment feedback documents for both faculty and students have been designed.

- Ultimately do the revised programs, courses, and materials reflect industry's needs for a skilled and knowledgeable workforce?

The project has identified industry advisory panel members to review materials developed and a rubric for assessing the quality of materials developed.

- Do the developed materials allow faculty to adapt innovative, field-tested material, and create cohesive, integrated curriculum?

Faculty feedback during pilot-testing will specifically address this project goal.

Goal 1: Continued

- For each course and module are there student learning outcomes (SLO) defined, emphasizing what the student should know and be able to do upon course (or module) completion?

Three major categories of SLO's have been defined and processes are in place to assure that assessment and evaluation will measure that they are achieved including faculty, employer and student alumni feedback.

- Are there pre-assessment tests of students (and incumbent workers) to help them assess their existing knowledge and competencies?

The plan is to develop Concept Inventory (CI) as a pre-assessment test for knowledge and understanding of fundamental concepts.

Goal 1: Continued

- Are there formative assessments and faculty feedback throughout the learning experience in a course? For the pilot course development, are there processes to improve the curricula and program development based on these formative assessments and faculty feedback?

Assessment documents for faculty and student feedback for module and lab experiment evaluation have been developed for use in the pilot-testing phase. A rubric has been developed for overall assessment of all the Esyst materials developed by a panel of experts.

- Are there team based activities, independent research projects, problem solving and communication skills, both written and verbal built into the newly designed courses as well as the written exams? Are there assessments of all these skills which are highly valued by employers in new employees?

This has been an overarching goal for the faculty project team in developing the new curriculum materials. Faculty feedback during pilot testing specifically addresses how effectively we have achieved these objectives.

Goal 1: Continued

- Are there cumulative mastery exams to confirm that the student has met the student outcomes and industry skill requirements for that course?
Student assessment exams are part of each module product deliverable plan. The Concept Inventory (CI) will also measure student's knowledge gained at the end of the course,
- Are there student surveys and feedback of the course material, pedagogy, and faculty? Are these feedbacks analyzed to improve the course, curricula materials, and instruction?
These types of instruments will be put in place in the pilot phase, refined and implemented more broadly later.

Goal 2: Develop a complete web-based delivery system for the resources associated with the Systems Approach for Electronics Technology.

Evaluation Questions:

- Is there an effective delivery mechanism and guidance for use of such a system?

The evaluator has assessed thru interview and observation during the on-site reviews conducted this past year that MATEC has extensive experience and the internal skills and resources demonstrated on prior funded projects to guide the web development.

- Have innovative teaching strategies and interactivity been incorporated into the modified materials, courses, and website?

They will be included in the product deliverables and systems development plan. The earlier discussed module assessment tools will include addressing this requirement and the evaluator will review the project documentation and also include this in interviews with participating pilot faculty member.

Goal 2: Continued

- Are there professional development opportunities for electronics faculty to learn new systems methodology, iLab, and other web-based delivery system?
Webinars, off site seminars and the SAMETEC are some of the professional development activities planned. In this period two web seminars have been delivered to a total of 82 participants. The one day faculty professional development workshop on electronics systems at the SAME-TEC conference attracted 25 faculty participants.
- What are the expectations for changes in teaching practices and how will it be measured? Are there opportunities for new faculty collaborations? Student mentoring?
Student and faculty feedback surveys as well as the plan to incorporate many new lab exercises and the remote i-Labs to engage the students plus the use of web dissemination for new curriculum with chat rooms and blogs provide opportunities for new student and faculty interactions. The evaluator will review the planned faculty and student surveys.

Goal 2: Continued

- Does use of the project's materials result in genuine professional development that enhances faculty's capability in the classroom?

That is a goal of the project and curriculum and program development process. The evaluator will conduct faculty interviews and survey to determine the impact.

- Has course delivery, format, and options been created to address learner and industry demands and constraints?

The team has reviewed an approach utilized by Fox Valley which creates 9 credit modules which reduces course and semester time which is better suited to working student time constraints and has aided in student retention/graduation rates. The evaluator recommends that the project team specifically address this issue in their conferences and highlight successful practices.

Goal 3: Increase enrollments in technology programs by appealing to those students, both high school graduates and working adults, to engage their interest in the real world of electronics today.

Evaluation Questions:

- What are the baseline student enrollment, persistence and completion numbers from participating colleges?
Baseline student enrollment in the electronics classes impacted by this new program and curriculum need to be provided by all participating partner colleges and faculty for fall,2008.
- Which schools and programs have adopted/adapted the new curricula and web delivery? Are there new degrees, certificates?
The project team plans to collect this data from partner colleges and also from feedback at conferences
- What pathways related outreach is there to high schools, four-year institutions and industry?
This will really be a function of each unique school and may help us develop articulation and outreach and recruitment strategies, which can be shared among the partner community college's electronics programs. The faculty/college survey described below can include this information.

Goal 3: Continued

- Has retention and completion significantly improved over baseline and has program capacity been achieved?

Once we have collected baseline data for 2008, we will be able to measure impact as we introduce new modules in 2009/2010. Describing and collecting information on other factors which the college employs to improve student retention and program completion will also be useful and can be collected thru the proposed faculty survey, which I would recommend be done at least annually. The SAME-TEC conference may be the logical venue to discuss findings.

- How active is employer involvement in the college's electronics technology program? Is there an industry advisory committee? What is their level of support? Do they provide internships and hire program graduates?

The evaluator has developed a questionnaire for the project manager to send each partner college in the spring and collect/analyze and provide feedback to the team.

Goal 3: Continued

- Does industry value program graduates? Are there processes to follow-up and measure the performance and job readiness of program graduates in industry?
The evaluator will develop a separate survey document for the college partners to use with their local industry advisory panels.
- How is electronics technology recruiting conducted at the college? Are the technology faculty and program leaders involved in the recruiting process? What specific types of recruiting events are conducted each year? How useful are the career/outreach materials and website to users such as students and counselors? Are there other outreach efforts to foster interest in electronics technician education? Are there specific strategies and metrics to assess the programs effectiveness in reaching out to under-represented groups and increasing enrollment and retention?

The evaluator will include these topics in the above questionnaire. The goal is to share best practices for recruiting and retention.

Goal 4: Ensure the curriculum addresses the needs of industry by incorporating the most recent electronic methods, circuits, systems, and practices involving simulations and online laboratories.

Evaluation Questions:

- Is there a process in place for review across industry segments to ensure the broad appeal of the program?
The evaluator will review the industry members selected for the initial industry review and project plans for pilot testing and broader dissemination.
- Does industry use the programs for incumbent workforce and/or new hire training?
Interview and survey of industry and participating college faculty partners will be used to collect evidence of use of the materials in industry training programs.

Goal 4: Continued

- Does industry provide internships or externships, other financial support for programs or students?
- *Interviews and surveys of participating college and electronics faculty members will address this. The objective of improving community college student retention depends on both outstanding programs and educational materials but also on providing students with work-study as well as financial support to continue their education.*
- Are incumbent workers aware of career opportunities for career growth and knowledge acquisition?
For participating industry partners, the industry survey described earlier will address this question.